

REMARKS/ARGUMENTS

Applicant respectfully requests reconsideration of the application. Claims 1-83 are now pending, a total of 83 claims. Claims 1, 5, 33, 56 and 79 are independent.

I. Paragraph 3 of the Office Action – Related Applications

Paragraph 3 of the Office Action is not understood.

The rules that relate to identifying applications in the introductory paragraph of the application (*e.g.*, 37 C.F.R. §§ 1.55 and 1.78) only require enumeration of applications from which priority is claimed.

This application claims priority from no other application. Thus, the application in its present condition fully complies with the relevant rules. If the Examiner is aware of a rule that has been overlooked, Applicant requests identification of that rule.

II. Paragraph 4 of the Office Action – Rule 83

37 C.F.R. § 1.83 requires that the drawings “show every feature of the invention specified in the claims.” Examples of “entry exception,” “resumption exception,” and “entry handler” are shown at Figs. 3A-3G. Examples one embodiment of “how” these features may interact with other components are shown in Figs. 3H, 3I, and 3J.

III. Paragraph 5 of the Office Action - § 101 Issues

Paragraph 5 of the Office Action asserts that the claims are “directed to method steps which can be practiced mentally in conjunction with pen and paper.” The Office Action is in error. For example, claim 1 recites “raising and servicing the entry exception.” Claim 56 recites “establishing an entry handler for execution at a specified entry point or on a specified entry condition to the operating system.” These steps are necessarily implemented by machine. A human being, even one with pencil and paper, cannot manipulate software structures and hardware signals to meet these claim limitations.

Any § 101 rejection may be withdrawn.

IV. Paragraph 6 of the Office Action - § 112 ¶ 2 Issues

The question relating to the relationship between “extended context” and “modified context” is not understood. The “modified context” is the context modified by “the entry handler programmed to ... modify the thread context before delivering the modified context to the operating system.” The “extended context” includes “resources of the computer associated with the thread that are beyond those resources whose association with the thread is maintained by the operating system.” These are two separate claim limitations, that are each satisfied or not satisfied on their own terms. If the Examiner perceives any ambiguity, Applicant requests a more precise explanation.¹

Applicant respectfully observes that “without modifying a pre-existing operating system” is not ambiguous. Modifying “associated data registers” is a change to something “associated” with an operating system, not a change to the operating system itself. This part of the Office Action is irrelevant to the claim. As a practical matter, modifying any one of the “code,” “configuration” or “functions” results in a change to the other two – there is no ambiguity among these three. Applicant suggests that the claim is “reasonably” precise, and “as precise as the subject matter allows,” and thereby meets the requirements of MPEP § 2173.02. Any rejection may be withdrawn.

The question relating to “without modifying a pre-existing operating system” and “modify[ing a] thread context” is not understood. A “thread context” is not an “operating system.” There is no inconsistency between these two phrases. No rejection is warranted.

The Office Action’s concern for “returning control” is not understood. “Returning control” is a well-established term of art that requires no definition or antecedent basis. No rejection is warranted.

¹ The addition of the words “that are” and “the extended context” do not alter the scope of the claims.

V. Claims 1-4, 5-32, 82, 83

Claim 5 is discussed in connection with Nilsen '665 and Chernoff '028 at paragraphs 8 and 10 of the Office Action. Claim 5 recites as follows:

5. A method, comprising:

scheduling concurrent threads of control by a pre-existing thread scheduler of a computer, each thread having an associated context, an association between a thread and a set of computer resources of the associated context being maintained by the thread scheduler; and

without modifying the thread scheduler, maintaining an association between one of the threads and an extended context of the thread through a context change induced by the thread scheduler, the extended context including resources of the computer associated with the thread that are beyond those resources whose association with the thread is maintained by the thread scheduler.

The first paragraph of claim 5 recites a “context” and a “pre-existing thread scheduler” that are designed to work with each other. The second paragraph of claim 5 then recites an “extended context” that is “beyond” the capabilities of the “thread scheduler.” Claim 5 recites that, even though the “thread scheduler” is unable to manage the “extended context,” nonetheless the scheduler and extended context are made to work with each other by “maintaining an association” between the “extended context” and a thread that can be scheduled by the “pre-existing thread scheduler.” In some embodiments, claim 5 might allow the use of a mature operating system (*e.g.*, Microsoft Windows) designed for one computer architecture to be used with a computer of an entirely different architecture.

In contrast, neither reference discusses allowing a “thread scheduler” to perform a “context change” using an “extended context” that is “beyond” the “thread scheduler.”

The two portions of Chernoff '028 indicated in the Office Action do not relate to each other, and cannot be combined to meet the claim language. For example, col. 25 line 4 to col. 26 line 12 discusses a non-native “context data structure” 180, but only discusses software that is designed to work with that very “context data structure,” not an “extended context” that is “beyond” that software. In contrast, col. 88, lines 22-40 never mentions the “context data structure 180” or its associated software – instead, it changes the subject. Col. 88 discusses a fairly conventional exception mechanism that stores the context of a program in the conventional way, dispatches to a handler through a dispatch table in the conventional way, and handles the

exception in the conventional way. This portion of Chernoff '028 does not mention any problem that would call for an “extended context,” let alone suggest the use of an “extended context” that corresponds to claim 5.

Because claim 5 recites a feature that is absent from both Nilsen '665 and Chernoff '028, claim 5 is patentable over this combination.

Applicant further observes that the Office Action makes no showing of “motivation to combine” Nilsen '665 with Chernoff '028, or the two disparate portions of Chernoff '028 with each other, let alone a showing based only of facts that were taught in that prior art. Nor does the Office Action make any showing of “reasonable expectation of success.” Without the showings required by MPEP §§ 2143.01 and 2143.02, no *prima facie* rejection exists.

Claim 1 recites similar language, a “pre-existing operating system” that works with “extended context” in a similar way. Claim 1 is patentable for similar reasons.

VI. Claims 33-55 and 56-78

Claim 33 is mentioned in paragraphs 8 and 27 of the Office Action. Claim 33 recites as follows:

- 33. A method, comprising:
 - establishing an entry exception to be raised on each entry to a computer operating system at a specified entry point or on a specified condition;
 - establishing a resumption exception to be raised on each resumption from the operating system complementary to one of the specified entries;
 - on detecting a specified entry to the operating system from an interrupted process of the computer, raising and servicing the entry exception, and then entering the operating system to perform a service associated with the original operating system entry; and
 - on detecting a complementary resumption, raising and servicing the resumption exception, and returning control to the interrupted process.

Paragraph 8 of the Office Action asserts that Nilsen '665 teaches “an entry exception,” and an “exit exception” at col. 25, lines 42-67. This is not correct. This very topic was discussed in the Interview of July 2, 2003. The Summary of that Interview (memorialized at Applicant's Response of July 3, 2003, at page 5) reads as follows (underline added):

In the interview, it was agreed that col. 25, lines 40-67, col. 26, lines 6-15, col. 33, lines 40-67 and col. 37, lines 60-67 of the Nilsen '665 patent do not discuss any

feature analogous to the “entry exception” and “exit exception” recited in claim 33. Further, Nilsen ’667 makes only minor mention of the “operating system,” and never in a context that relates to the “operating system” limitations of the claim.

Nor does the June 2004 Office Action identify particular features of Nilsen ’665 that might correspond to these exceptions, or make any comparison of these claim limitations to Chernoff ’028. The Office Action makes no showing of “motivation to combine” or “reasonable expectation of success.” Thus no rejection exists.

A brief review of Chernoff ’028 reveals nothing that might correspond.

Independent claim 56 recites similar language and is patentable for similar reasons.

VII. Claim 79

Claim 79 is discussed in paragraphs 8 and 57 of the Office Action. Claim 79 recites as follows:

79. A method, comprising:

during invocation of a service routine of a computer, passing a linkage return address to the service routine at which to resume execution on completion of the service, the linkage return address being deliberately chosen so that an attempt to execute an instruction from the linkage return address on return from the service routine will raise a program execution exception;

on return from the service routine, attempting to execute the instruction at the linkage return address and raising the chosen exception; and

after servicing the exception, returning control to a caller of the service routine.

Paragraph 57 of the Office Action asserts that claim 79 is “rejected for the same reasons stated in the rejection of claims 1 and 33.” This cannot be so. Neither claim 1 nor claim 33 recite language similar to the language underlined above. This sentence of the Office Action raises no rejection.

Paragraph 57 then admits that nothing in either Nilsen ’665 or Chernoff ’028 corresponds to the underlined language. Paragraph 57 nonetheless asserts that the language would be obvious. The Examiner’s attention is drawn to MPEP § 2143.03:

2143.03 All Claim Limitations Must Be Taught or Suggested

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). ...

The Office Action identifies no point in either Nilsen '665 or Chernoff '028 that even “suggests” an “address ... deliberately chosen [to] raise a program execution exception.” No rejection exists.

Further, MPEP § 2143.03 is based on Federal Circuit law, which holds that there is no obviousness once a claim element is admitted to be totally novel to the art. To render a claim obvious, the relied-upon prior art must teach every element of the claim. Even if the missing element is well-known in the art, specific prior art must be put forward against the limitation. *E.g., Motorola v. Interdigital Technology Corp.*, 121 F.3d 1461, 1466-67, 43 USPQ2d 1490, 1490-91 (Fed. Cir. 1997). If any future rejection maintains that an element totally absent from the art is nonetheless obvious, Applicant requests written authority that overrules MPEP § 2143.03 and *Motorola*.

To the extent that the current Office Action relies on “common knowledge” or “well-known prior art,” applicant calls for a reference or an affidavit pursuant to 37 C.F.R. § 1.104(d)(2).

For these reasons, claim 79 is patentable over the art.

VIII. Dependent claims

Claims 2-4, 6-32, 34-55, 57-78 and 80-83 are dependent on the independent claims discussed above and patentable therewith. These dependent claims recite further distinctions from Nilsen '665 and Chernoff '028, and are further patentable for those reasons.

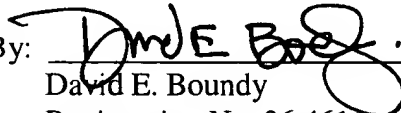
In view of the amendments and remarks, Applicant respectfully submits that the claims are in condition for allowance. Applicant requests that the application be passed to issue in due course. The Examiner is urged to telephone Applicant's undersigned counsel at the number noted below if it will advance the prosecution of this application, or with any suggestion to resolve any condition that would impede allowance. In the event that any extension of time is required, Applicant petitions for that extension of time required to make this response timely.

Kindly charge any additional fee, or credit any surplus, to Deposit Account No. 23-2405, Order No. 114596-05-4013.

Respectfully submitted,

WILLKIE FARR & GALLAGHER LLP

Dated: September 13, 2004

By: 
David E. Boundy
Registration No. 36,461

WILLKIE FARR & GALLAGHER LLP
787 Seventh Ave.
New York, New York 10019
(212) 728-8000
(212) 728-8111 Fax